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Attorneys for Plaintiff ClearOne, Inc.

**IN THE UNITED STATES DISTRICT COURT
DISTRICT OF UTAH, CENTRAL DIVISION**

**CLEARONE, INC., a Utah corporation,
Plaintiff,**

v.

**SHURE INC., an Illinois Corporation,
BIAMP SYSTEMS CORPORATION, a
Delaware Corporation, and QSC
AUDIO PRODUCTS, LLC, a California
Limited Liability Company,**

Defendants.

COMPLAINT AND JURY DEMAND

Case No. 2:17-cv-00322-CW

Honorable Clark Waddoups

Plaintiff ClearOne, Inc. ("Plaintiff" or "ClearOne"), by and through counsel of record, hereby files this Complaint against Defendants Shure, Inc. ("Shure"), Biamp Systems Corporation ("Biamp"), and QSC Audio Products, LLC ("QSC") (collectively, "Defendants") as follows:

INTRODUCTION

1. ClearOne brings this patent infringement action to stop Defendants Shure, Biamp, and QSC from their wrongful use of ClearOne's market-leading, patented audio

conferencing technologies.

2. Despite being a small public company, ClearOne has grown into the global market leader in the installed audio conferencing market and a leading provider of premium audio conferencing systems and other related products for audio, video, and web conferencing applications. As a market leader, ClearOne is focused on developing cutting-edge conferencing and collaboration products. Through decades of innovation, investment, and effort by ClearOne and its team of inventors and engineers, ClearOne has developed industry-leading products and a portfolio of over 100 issued patents and pending patent applications.

3. No later than 2010, ClearOne inventors conceived and developed a beamforming microphone conferencing system that was designed to replace up to a dozen individual microphones with a small beamforming microphone array that could be placed overhead or otherwise out of the way and yet had superior audio quality and clarity. In 2012, four years ahead of its closest competitors, ClearOne was first to market with this beamforming audio conferencing technology – the Beamforming Microphone Array audio conferencing system – which combined beamforming with acoustic echo cancellation and adaptive steering or smart beam selection to provide superior audio performance and clarity.



ClearOne Beamforming Microphone Array

4. ClearOne has been recognized several times for its continued innovation and excellence in the installed audio conferencing market, including:

- 2017 Integrated Systems Europe “Best of Show” for its Beamforming Microphone Array 2;
- 2014 TMCnet Communications Product of the Year for its Beamforming Microphone Array;
- 2014 Frost & Sullivan Global Installed Audio Conferencing Systems Market Leadership Award; and
- 2013 Utah Innovation Awards Finalist for its Beamforming Microphone Array.

5. To protect its industry-leading technology, ClearOne filed provisional and utility patent applications, including United States Patent Application No. 15/190,424 (“the ‘424 Application”) entitled “Conferencing Apparatus that combines a Beamforming Microphone Array with an Acoustic Echo Canceller.” The ‘424 Application has now issued as United States Patent No. 9,635,186 (“the ‘186 Patent”). A true and correct copy of the ‘186 Patent is included as Exhibit A.

6. Defendants’ products and services make pervasive use of ClearOne’s patented technology and infringe the ‘186 Patent.

7. ClearOne seeks injunctive relief barring Defendants from infringing ClearOne’s patented technology, damages for Defendants’ past infringement, and ClearOne’s attorneys’ fees and costs associated with this action.

JURISDICTION AND VENUE

8. This lawsuit is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 101 et seq. This Court has subject-matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

9. This Court has personal jurisdiction over Defendants pursuant to the Utah Long Arm Statute, Utah Code Ann. § 78-27-24 because, among other reasons, Defendants transact and have transacted business in Utah and have caused injury to ClearOne, which is headquartered in and has its principal place of business in Utah.

10. Venue is proper in this district under 28 U.S.C. §§ 1391(b) & (c) and 1400(b) because Defendants are subject to personal jurisdiction in this district and therefore reside in this district.

THE PARTIES

ClearOne, Inc.

11. ClearOne is a public corporation, incorporated in Utah, with a principal place of business at 5225 Wiley Post Way, Suite 500, Salt Lake City, Utah 84116.

12. ClearOne was founded in 1983. From its inception, ClearOne has been dedicated to the design, development, and sales of conferencing, collaboration, and network streaming and signage solutions for voice and visual communications. ClearOne has created hundreds of new products that improve people's ability to collaborate and communicate, whether they are in the same room or on opposite sides of the globe.

13. ClearOne's commitment to innovation and quality in the field of voice and visual communication solutions is well-known. ClearOne has developed several

industry firsts, including:

- First professional-grade Beamforming Microphone Array;
- First product to use Distributed Audio Echo Cancellation in an audio conferencing system;
- First conference phone to provide wireless conferencing;
- First fully-scalable conference phone that daisy-chains multiple phone units; and
- First product to bridge the wide price/performance gap that existed between plug-and-play tabletop conferencing phones and professionally-installed audio conferencing systems.

14. Today, installed audio conferencing is one of ClearOne's core businesses, and ClearOne has become the market leader in that field, with over 50% of the global market. ClearOne's products are used by thousands of organizations worldwide, including schools, government entities, medical facilities, law firms, businesses, and houses of worship.

Shure, Inc.

15. Shure is a private corporation, incorporated in Illinois, with its principal place of business at 5800 W. Touhy Avenue, Niles, Illinois 60714.

16. Shure designs and manufactures audio systems. Shure's products include wireless and wired microphone systems, digital signal processors, and personal monitor systems, among others. Shure is a competitor of ClearOne.

17. Shure advertises, encourages, and instructs its customers to make and use integrated systems consisting of its beamforming microphones (such as the Shure

Microflex Advance Array microphone) and its upcoming Intellimix P300 Audio Conferencing Processor (scheduled for launch in fall 2017), as well as acoustic echo cancellation products from other companies (such as QSC's Q-SYS platform and Biamp's Tesira/TesiraFORTE audio processors and software).

18. The performance of these integrated systems plays a key role in Shure's ability to compete effectively in the audio conferencing market.

19. Shure is aware that ClearOne has patents relating to beamforming audio conferencing systems.

Biamp Systems Corporation

20. Biamp is a private corporation, incorporated in Delaware, with a principal place of business at 9300 S.W. Gemini Drive, Beaverton, Oregon 97008.

21. Biamp designs and manufactures audio systems. Biamp's products include networked digital audio platforms, digital signal processors, and scalable media systems for digital audio networking, among others. Biamp is a competitor of ClearOne.

22. Biamp advertises, encourages, and instructs its customers to make and use integrated systems consisting of its acoustic echo cancellation products (such as its Tesira/TesiraFORTE audio processors and software) and the Shure Microflex Advance Array microphone.

23. The performance of these integrated systems plays a key role in Biamp's ability to compete effectively in the audio conferencing market.

24. Biamp is aware that ClearOne has at least one patent relating to beamforming audio conferencing systems.

QSC Audio Products, LLC

25. QSC is a private company organized as a California limited liability company with its principal place of business at 1675 MacArthur Blvd., Costa Mesa, California 92626.

26. QSC designs and manufactures audio systems. QSC's products include power amplifiers, loudspeakers, mixers, and networked audio and control. QSC is a competitor of ClearOne.

27. QSC advertises, encourages, and instructs its customers to make and use integrated systems consisting of its acoustic echo cancellation products (such as its Q-SYS platform) and the Shure Microflex Advance Array microphone.

28. The performance of these integrated systems plays a key role in QSC's ability to compete effectively in the audio conferencing market.

29. QSC is aware that ClearOne has at least one patent relating to beamforming audio conferencing systems.

BACKGROUND OF THE TECHNOLOGY

30. The technology at issue in this case pertains generally to the field of digital signal processing techniques, as used primarily in audio and video teleconferencing systems that are often deployed in conference rooms.

31. Beamforming, also known as spatial filtering, is a signal processing technique used in sensor arrays for directional signal transmission or reception. Beamforming can be used to select desired sound sources, while rejecting unwanted sounds. In an audio conferencing system, beamforming can be used to select, or focus on, a participant's voice, while rejecting noise and interfering speech from other

directions, which provides superior audio performance and clarity.

32. Another related and important technology in audio conferencing is acoustic echo cancellation. This technology improves audio quality by reducing or preventing echo from being created or reducing/removing it after it is already present. For example, from the perspective of remote audio conferencing participants, their own voices are recreated by loudspeakers in the conference room, and these audio signals are also then picked up by the microphones in the room and sent back the remote participants, causing an undesirable echo. Acoustic echo cancellation involves recognizing that echo, then reducing or removing it by subtracting it from the transmitted signal.

33. ClearOne is at the forefront of integrating beamforming microphone arrays with acoustic echo cancellation. ClearOne's '186 Patent covers a conferencing apparatus that combines a beamforming microphone array with an acoustic echo canceller and, among other things, inhibits the changing of the selection of the combined echo cancelled signals while only the far end signal is active, as well as other embodiments.

34. The '186 Patent employs a "hybrid" method, wherein microphone signals are beamformed into a plurality of fixed beams, and echo cancellation is then applied to those fixed beams. This allows the echo cancelers to avoid continuous learning based on the changing characteristics of the beamformer, but also avoids having to increase the number of echo cancelers when the number of microphones is increased, two problems which plague other methods.

35. ClearOne currently employs the technology in the '186 Patent in its Beamforming Microphone Array and CONVERGE Pro products, both of which are now in their second generation.

36. ClearOne's investments in technology and its reputation as a leader and innovator is harmed by ongoing unauthorized use of its technology.

DEFENDANTS' WILLFUL INFRINGEMENT

37. On March 10, 2017, ClearOne's counsel wrote to Christine Schyvinck, President and CEO of Shure; Matt Czyzewski, President and CEO of Biamp; and Joe Pham, President and CEO of QSC, to notify them of the existence of the '424 Application and the fact that the USPTO had provided ClearOne a Notice of Allowance. ClearOne alerted each company as to the scope of the '424 Application, including the allowed claims. ClearOne also stated its belief that the Shure Microflex Advance beamforming microphone array combined with the Biamp Tesira or QSC Q-SYS audio processors were covered by the allowed claims of the '424 Application and provided a detailed 18-page claim chart that set forth the publicly available evidence demonstrating Defendants' infringement. The claim chart is attached as Exhibit B. ClearOne also demanded that each company cease and desist from any activities that would infringe upon ClearOne's patent rights.

38. On March 21, 2017, Shure responded with a short letter indicating that they received ClearOne's March 10 letter and were still investigating its merits. By letter with the same date, counsel for Biamp sent counsel for ClearOne a three-sentence note, indicating that they had received the March 10 letter, were investigating its merits, and planned to respond in due course. QSC never responded to the March 10 letter.

39. On April 10, 2017, Shure requested a call with ClearOne to discuss the issues raised in ClearOne's March 10 letter, and ClearOne proposed a call on April 18 or 19.

40. Rather than respond to ClearOne's offer to discuss the matter, Shure instead sent another letter on April 17, 2017, stating that they had completed their review of ClearOne's March 10 letter and claiming that Shure's products did not infringe the '424 Application. Despite having the benefit of ClearOne's detailed claim charts, Shure did not provide any explanation as to why they believed that Shure's products did not infringe the allowed claims of the '424 Application.

41. There have been no further communications with Shure, Biamp, or QSC. The '186 Patent issued on April 25, 2017, and this lawsuit ensued.

**CLAIM FOR RELIEF FOR PATENT INFRINGEMENT
AGAINST ALL DEFENDANTS**

42. ClearOne incorporates by reference paragraphs 1 through 41.

43. ClearOne is the owner of all rights, title, and interest in the '186 Patent. The '186 Patent issued on April 25, 2017.

44. The '186 Patent is valid and enforceable.

45. Defendant Shure manufactures, uses, offer to sell, and sells beamforming microphones. Shure advertises, encourages, and instructs its customers to make, use, offer to sell, and/or sell, integrated systems consisting of Shure's beamforming microphones (such as the Shure Microflex Advance Array microphone) and acoustic echo cancellation products from other companies (such as QSC's Q-SYS platform and Biamp's Tesira/TesiraFORTE audio processors and software). These integrated systems perform beamforming operations that combine microphone signals into signals

corresponding to fixed beams, and then perform acoustic echo cancellation on the combined signals, in addition to other operations in the '186 Patent. Indeed, Shure has announced partnerships with several AV hardware and software providers, including both Biamp and QSC, to manufacture and sell these integrated systems. Shure thereby participates in joint infringement, contributory infringement, or inducement to infringe with acoustic echo cancellation companies to manufacture, make, use, sell, offer for sale, or import integrated systems that embody one or more claims of the '186 Patent, including representative claims 1, 7, and 13 of the '186 Patent.

46. Defendant Biamp manufactures, uses, offers to sell, and sells acoustic echo cancellation products. Biamp advertises, encourages, and instructs its customers to make, use, offer to sell, and/or sell, integrated systems consisting of Biamp's acoustic echo cancellation products (such as Biamp's Tesira/TesiraFORTE audio processors and software) and other companies' beamforming microphones (such as the Shure Microflex Advance Array Microphone). These integrated systems perform beamforming operations that combine microphone signals into signals corresponding to fixed beams, and then perform acoustic echo cancellation on the combined signals, in addition to other operations in the '186 Patent. Indeed, Biamp has announced partnerships with beamforming microphone providers such as Shure to manufacture and sell these integrated systems. Biamp thereby participates in joint infringement, contributory infringement, and/or inducement to infringe with microphone companies to manufacture, make, use, sell, offer for sale, or import integrated systems that embody one or more claims of the '186 Patent, including representative claims 1, 7, and 13 of the '186 Patent.

47. Defendant QSC manufactures, uses, offers to sell, and sells acoustic echo cancellation products. QSC advertises, encourages, and instructs its customers to make, use, offer to sell, and/or sell, integrated systems consisting of QSC's acoustic echo cancellation products (such as QSC's Q-SYS platform) and other companies' beamforming microphones (such as the Shure Microflex Advance Array Microphone). These integrated systems perform beamforming operations that combine microphone signals into signals corresponding to fixed beams, and then perform acoustic echo cancellation on the combined signals, in addition to other operations in the '186 Patent. Indeed, QSC has announced partnerships with beamforming microphone providers such as Shure to manufacture and sell these integrated systems. QSC thereby participates in joint infringement, contributory infringement, or inducement to infringe with microphone companies to manufacture, make, use, sell, offer for sale, or import integrated systems that embody one or more claims of the '186 Patent, including representative claims 1, 7, and 13 of the '186 Patent.

48. Each Defendant knew of the '424 Application, which issued as the '186 Patent, prior to the filing of this action at least due to ClearOne's identification of the '424 Application to Defendants in the March 10, 2017 letter that was sent to each Defendant's respective chief executive officer.

49. Defendants' infringement is willful.

50. ClearOne has suffered and continues to suffer damages and irreparable harm because of Defendants' past and ongoing infringement.

51. Unless Defendants' infringement is enjoined, ClearOne will continue to be damaged and irreparably harmed.

52. ClearOne meets the criteria for, and is entitled to, temporary, preliminary, and permanent injunctive relief.

PRAYER FOR RELIEF

WHEREFORE, ClearOne respectfully asks that the Court enter judgment against Defendants as follows:

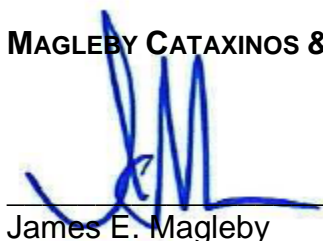
- A. That Defendants Shure, Biamp, and QSC have infringed (either literally or under the doctrine of equivalents), jointly, and/or indirectly, by way of inducing or contributing to the infringement of, one or more claims of ClearOne's '186 Patent;
- B. That such infringement was willful;
- C. For temporary, preliminary, and permanent injunctive relief enjoining Defendants and their officers, directors, agents, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in active concert or participation with them, from infringement, inducing the infringement, or contributing to the infringement of the '186 Patent;
- D. For an award to ClearOne for its damages, costs, expenses, and prejudgment and post-judgment interest for Defendants' infringement of the '186 Patent as provided under 35 U.S.C. §§ 154(d) and 284;
- E. For an award to ClearOne for enhanced damages equal to treble the amount of actual damages, for the willful nature of Defendants' acts of infringement, with notice being made at least as early as the date of the filing of the complaint, as provided under 35 U.S.C. § 284;
- F. That this be declared an exceptional case within the meaning of 35 U.S.C.

§ 285 and that ClearOne be awarded its reasonable attorneys' fees against Defendants;

G. For any and all other relief to which ClearOne may show itself to be entitled.

Dated: April 25, 2017

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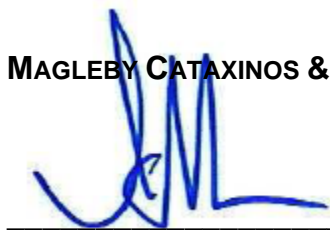
Attorneys for Plaintiff ClearOne, Inc.

JURY DEMAND

Pursuant to Fed. R. Civ. P. 38(b), Plaintiff ClearOne, Inc. hereby demands a jury trial on all issues triable by jury.

Dated: April 25, 2017

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